

## Virginia Ocean Plan

FY18 Task 94.01

Final Report, Grant Period October 1, 2018 to Dec 31, 2021

Grant# NA18NOS4190152

Compiled by Todd Janeski, VCU, Department of Life Sciences

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### Overview

The VCU Environmental Scientist/Analyst, as retained by the Virginia Department of Environmental Quality, Coastal Zone Management Program, served as the Ocean Planning Stakeholder Engagement Coordinator (OPSE) for the grant reporting period under the VACZM Section 309 Ocean Resources Strategy. The focus of the efforts were targeted to the commercial and recreation with the key outputs of strengthening the relationship with the CZM as it relates to changes in ocean use. The COVID-19 pandemic affected the seafood industry and the means by which meetings were held but the outreach and engagement efforts continued. The project requested a no-cost time extension due to the challenges posed with obtaining fisheries data from NOAA NMFS, VMRC and from the details that inform the task to create a Geographic Location Description.

Ocean planning in the Commonwealth includes a partnership, the Mid-Atlantic Regional Council on the Ocean (MARCO), which includes representatives from the States of New York, New Jersey, Delaware, Maryland and Virginia. The broader MARCO effort is being supported through several contractors such as Monmouth University, University of Delaware, Rutgers University, Nature Conservancy, and NatureServe. Primarily, ocean planning brings together the sectors of Ports and Navigation, Military, Commercial Fisheries, Recreational Users, Alternative and Traditional Energy, Conservation, Tourism, and Local Government. These sectors have been brought together both in the Commonwealth as well as in the region to share information regarding ocean uses for the purpose of understanding the complexity of overlapping and abutting uses. The relationship with the commercial industry has continued to grow where representatives from the east coast have shared their experiences with respect to the changes in ocean use. Fishermen have shared concerns regarding the loss of access to fishing areas or changes in transit routes that would increase operating expenses or take away days at sea.

This grant supported three primary topic areas: activities relative to fisheries engagement, supplemental research and fisheries valuation to inform a Geographic Location Description (GLD) and the development of a document communicating the value of commercial fisheries caught at sea and landed in the Commonwealth. The research to inform the development of a submission to NOAA for a GLD was synthesized into a document to be used to communicate to a wide range of stakeholders including but not limited to the agencies, the public, private sector and elected officials with the Virginia General Assembly.

### **Fisheries Engagement**

During the reporting period, the OPSE Coordinator had extensive communication with field partners including state and federal partners from NOAA NOS and NMFS, Bureau of Ocean and Energy Management (BOEM), Department of Mines Minerals and Energy (DMME), VA Marine Resources Commission (VMRC), VA Department of Environmental Quality (VDEQ), VA Department of Agriculture and Consumer Services (VDAC) Marine Products Board, State of

Rhode Island Coastal Program, Rhode Island Marine Fisheries Management, New York State Energy Research and Development Authority (NYSERDA); and the private sector including Orsted, Fisheries Representative from Sea Freeze Inc, Fisheries Liaisons and Representatives from the UK, Long Island Commercial Fisheries Association Responsible Offshore Development Alliance (RODA), Responsible Offshore Science Alliance (ROSA) and representatives from the Virginia commercial fishing fleet involved in pot-trap, trawl, dredge and gillnet fisheries. The focus of the interactions have primarily been to obtain input on the economic analysis to inform the valuation of Virginia fisheries that may be affected by changes in ocean use due to proposed changes to the Outer Continental Shelf Lands Act (OCSLA).

The OPSE Coordinator initiated communication with the newly developed organization to represent the interests of offshore commercial fishing, RODA. Conversations with the Director of RODA assisted in identifying opportunities and challenges with respect to deployment of offshore wind, changes in ocean use and the means to best engage those parties to ensure they are able to express their concerns. Through these conversations, clarification as to the details of the Vineyard Wind compensation package was provided to understand how these might unfold in future projects more directly linked to Virginia and the VA landings. Of note, local press articles and media from the northeast US demonstrated that an amicable resolution to managing the impacts to the fisheries from the turbines were possible when information was shared early in the process and when engagement allowed for an alternative perspective to be communicated.

OPSE Coordinator attended a meeting in Philadelphia to refine the direction and guidance documents for Responsible Offshore Science Alliance (ROSA). The OPSE Coordinator followed up with industry representatives from Long Island, Rhode Island and North Carolina concluding the outcome was not what was expected and that reaching agreement on a direction might pose more challenging due to the competing interests of those parties involved. These documents and process were shared with Virginia offshore industry representatives to keep them informed of opportunities and research that they might be able to influence. RODA presented to MARCO the development of ROSA and the intended direction, fielding feedback. The conclusions from RODA, were defining the focus of ROSA with effort on new research associated with energy development and not evaluate past research findings or data products.

The OPSE Coordinator was a member of the BOEM Virginia Offshore Wind Task Force and the VA/NC Offshore Wind Task Force also provided direct input to BOEM and DMME to inform the upcoming Virginia Offshore Wind Task Force Meeting by sharing data layers from the MARCO portal on those potentially affected fisheries from both the VA and NC Wind Energy Areas (WEAs). The OPSE Coordinator attended the Virginia Offshore Wind Development Alliance (VOWDA) meetings in Henrico, VA throughout the reporting period. The VOWDA meetings provided both an opportunity to hear firsthand the process being employed to begin the foundation for the new industry and to conceptualize the possible equivalent opportunities and challenges that will face the commercial fishing industry. The OPSE Coordinator coordinated and communicated with the LI, RI industry representatives to obtain input and details on the EIS for Vineyard Wind, shared EMF fact sheet, and discussed the potential development of cooperative research through ROSA. OPSE Coordinator shared with the VA industry upcoming opportunities to comment on the Port Access Study for RI and MA. The OPSE Coordinator attended the first stakeholder meeting for developing Kitty Hawk Wind and had follow up from

previous conversations with their developer and new Fisheries Liaison Officer from Virginia. OPSE Coordinator shared with the VA industry upcoming opportunities that included the Orsted-Dominion CVOW meeting at the VB Aquarium.

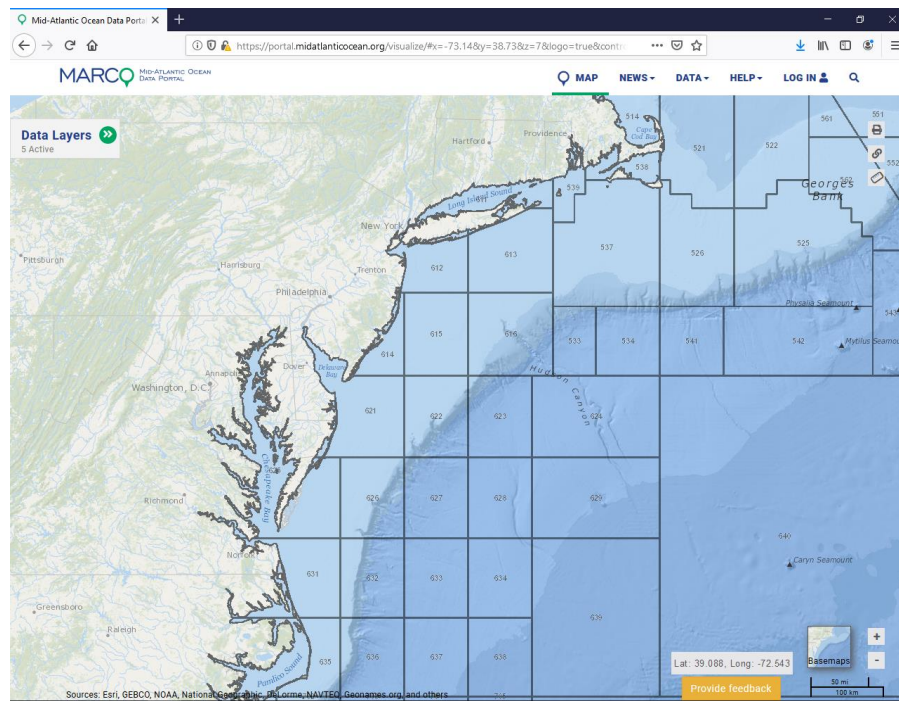
### **Research to inform a Geographic Location Description (GLD)**

The OPSE Coordinator worked closely with the VA DEQ and NOAA to scope out the process for submitting and develop background documentation for the policy analysis to complete a Geographic Location Description (GLD) and Unlisted Activity effects analysis with a focus on the effects associated with energy development (oil, gas and renewable energy) on commercial fishing that is landed in Virginia. The result of an approved GLD to the Commonwealth is to have a direct stake in the evaluation of fishery impacts and the revenue associated with commercial fisheries landings. An approved GLD permits the Commonwealth to review Licenses and Permits specifically those may adversely affect fisheries landings in the Commonwealth, the result is an increase in responsibility and review effort on limited VMRC staff however. NOAA provided support and shared the approved GLDs from Rhode Island, Oregon and the following as the needed components in a coastal effects analysis. Per NOAA guidance, a persuasive coastal effects analysis should identify:

1. The affected uses (e.g., commercial and recreational fishing, boating, tourism, shipping, energy facilities) and resources (e.g., fish, marine mammals, reptiles, birds, landmarks).
2. Where and in what densities the uses and resources are found.
3. How the state has a specific interest in the resource or use. Be specific in showing their connection to the coastal zone of the state (e.g., economic values, harvest amounts, vulnerabilities, seasonal information relevant to the proposed activity).
4. Where the proposed activity overlaps with these resources, uses and values.
5. Impacts to the resources or uses from the proposed activity.
6. The causal connection to the proposed activity, including how any impacts from the activity results in reasonably foreseeable effects on the state's coastal uses or resources.
7. Why any proposed mitigation may be inadequate.
8. Empirical data and information that supports the effects analysis and: can be shown to be reliable such as NEPA EIS documents; visualizes the affected area, resources and uses with maps; and shows intensities, concentrations, values, trends and vulnerabilities.

Per the Code of Virginia Section 28.2-100, the Coastal Zone is clearly defined and approval for changes in subject to NOAA review. Any projects that fall within the defined coastal zone, have an automatic review of federal actions within or affecting this area. A state's burden to demonstrate coastal effects means that a mere assertion that an activity in federal waters will have an impact is insufficient to make a finding of reasonably foreseeable coastal effects. Moreover, a state's effects analysis must provide more than general assertions of impacts or that resources or uses are "important," or should be reviewed, because of the proximity of an activity to state coastal uses or resources. Those effects are outlined above. In order to protect fisheries, through the federal consistency review process, the state needs the following: GLD, Enforceable Policies, and Approved Listing activities within that GLD. Our current program covers Bureau of Land Management and Bureau of Ocean Energy Management Permits for pipeline rights-of-way for oil and gas transmission on the Outer Continental Shelf. Virginia should request

approval a listed activities change to address exploration, development, and production of energy and resources (sand, minerals, etc). This needs NOAA approval and public notice. Several meetings were held between DEQ and NOAA OCM staff to finalize that the GLD and the Unlisted Activities documents with the conclusion that they will be submitted simultaneously. Additionally, NOAA agreed to consider using the NMFS Statistical Area as the geographic base layer for the boundary that will define the economic analysis of those affected fisheries for the GLD. Continued consultation with NOAA NMFS and the industry has helped refine the data to be considered for the economic analysis will be 5, 10, 15yr spans matching those data ranges from the Communities at Sea data layers in the MARCO Marine Data Portal. The span would include the range beginning in 2001 and extending to 2015.

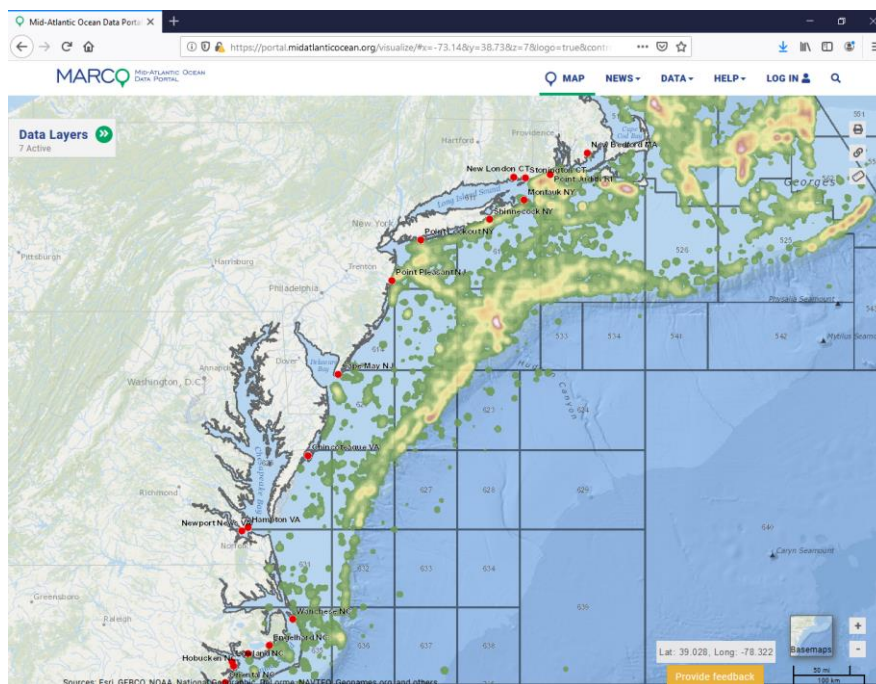


NOAA NMFS Statistical Area Designations

The NOAA NMFS Statistical Area Designations was selected based on its ability to serve as a commonly communicated base map with specific descriptive boundaries. Virginia's proposed GLD for federal waters is within the area defined as a polygon starting from the seaward limit of Virginia state jurisdiction at 3 nautical miles (nm) from the shoreline, and extending seaward to an easternmost boundary line matching the NMFS Greater Atlantic Statistical Area (GASA) including Blocks: 537, 612, 613, 614, 615, 616, 621, 622, 623, 625, 626, 631, 632, 635, and 636 (Figure 1a). The Easternmost border line of the GLD can be described as points from North to South, beginning at Corner 1, located at Latitude 41.240157 and Longitude -70; thence South to Corner 2, located at Latitude 39.833333 and Longitude -70; thence West to Corner 3, located at Latitude 39.833333 and Longitude -71.666667; thence South to Corner 4, located at Latitude 39 and Longitude -71.666667; thence West to Corner 5, located at Latitude 39 and Longitude -72; thence South to Corner 6, located at Latitude 38 and Longitude -72; thence West to Corner 7, located at Latitude 38 and Longitude -74; thence South to Corner 8, located at Latitude 35 and Longitude -74.

The OPSE Coordinator researched and provided to NOAA several years of summarized Virginia landings from the most valuable ocean-based fisheries to inform the primary phase of analysis. Data sources utilized to refine that initial analysis include the Community At Sea (C@C) data housed on the Mid-Atlantic Data Portal, Vessel Trip Reports (VTR), Vessel Monitoring System (VMS) and Automated Information System (AIS) data. None of these data products were designed nor intended for the purpose of valuing fisheries as it relates to changes in ocean use. However, this is the best available information aside from detailed reporting documents, dealer reports or observer reports that are beyond the scope and budget of this project. From those reports and NOAA NMFS data, the species of most concern and value to the Commonwealth include Sea Scallop, Menhaden, Striped Bass, Atlantic Croaker, Summer Flounder, Whelk and Black Sea bass. Additionally, the initial analysis included information pertaining to employment where more than 18,000 harvesters, processors, dealers, importers, wholesalers and retail workers are employed by the Virginia industry.

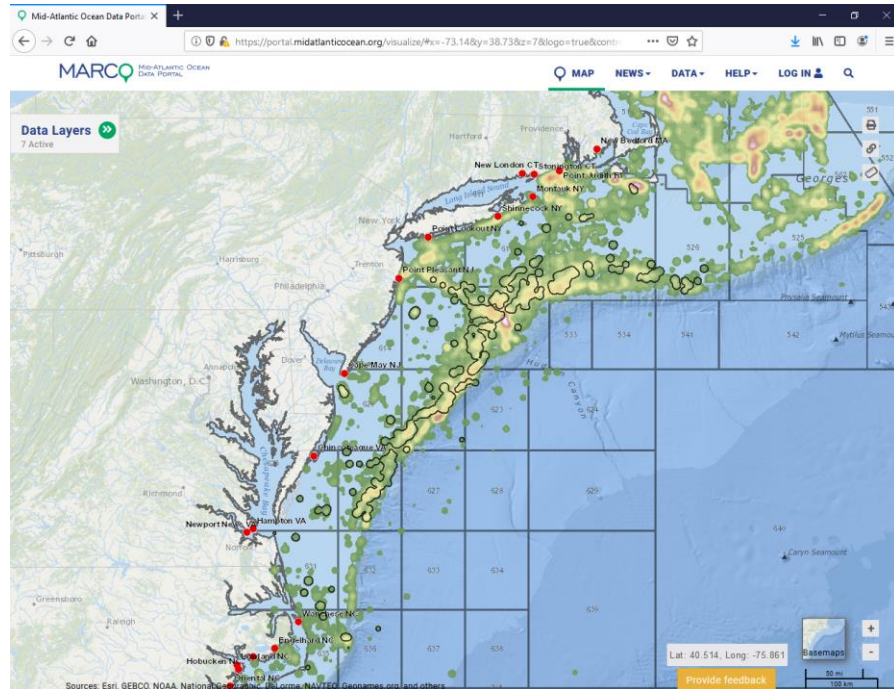
For the purposes of this analysis, the five-year date ranges of 2001-2005, 2006-2010, and 2011-2015 were used to match those in the C@S visual characterizations of fishing effort for Bottom Trawl >65 ft, Bottom Trawl <65ft, Dredge, Gillnet, and Pot and Trap. Corresponding to those date ranges, the NOAA NMFS has calculated those economic landings values to be worth \$689,688,821, \$729,985,035 and \$901,306,294, respectively. The most recent values, matching those of the C@S characterization of effort for the 10 year span, 2006-2015, are valued at \$1,631,291,329. The 2011-2015 C@S illustrate the effort in the northernmost reach of the proposed GLD being from the Dredge and Bottom Trawl fisheries. While the most recent five year span is the least of those characterized, they represent the greatest concentration over the widest geography for fishing effort and the landing value approaching \$1B. When overlaying those activities on the NOAA NMFS statistical areas, it becomes a valuable tool in recognizing where the greatest effort of the GLD would result.



Bottom Trawl, All Ports, Boats >65', 2011-2015



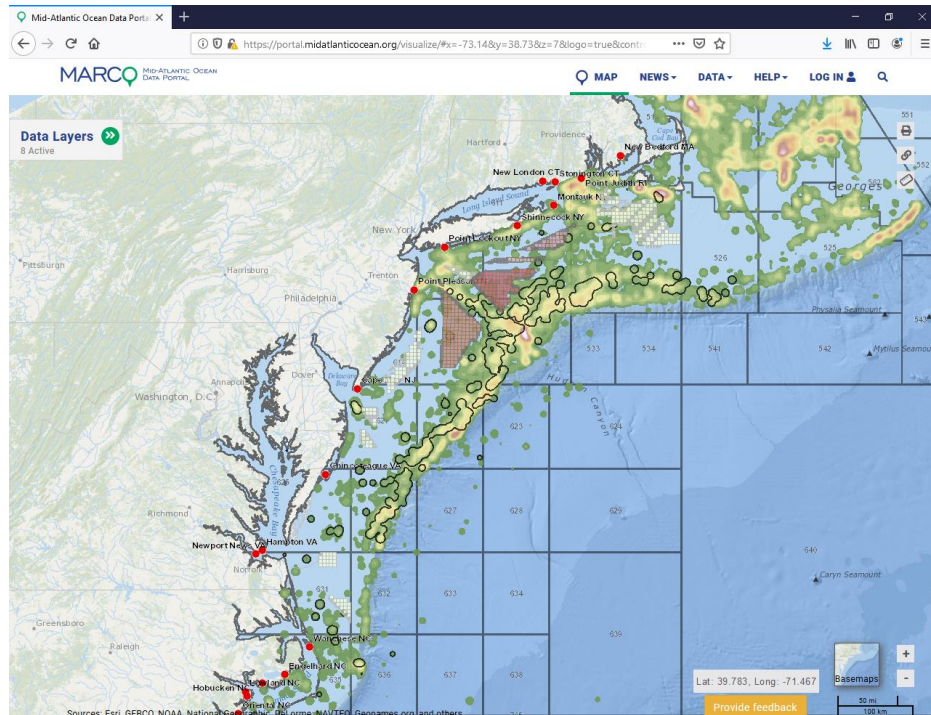
The above image represents the total activity as identified in the C@S data of bottom trawl from boats over 65' in length between the years 2011-2015. The heat-map intends to illustrate the fishing effort and can be seen by the concentration of effort near the Hudson Canyon. Refining this image by illustrating one port from Virginia, Newport News, where an outlined polygon of those vessels land shows the activities far from VA shores.



Bottom Trawl, Newport News, Boats >65', overlaid on the Total Activity, 2011-2015

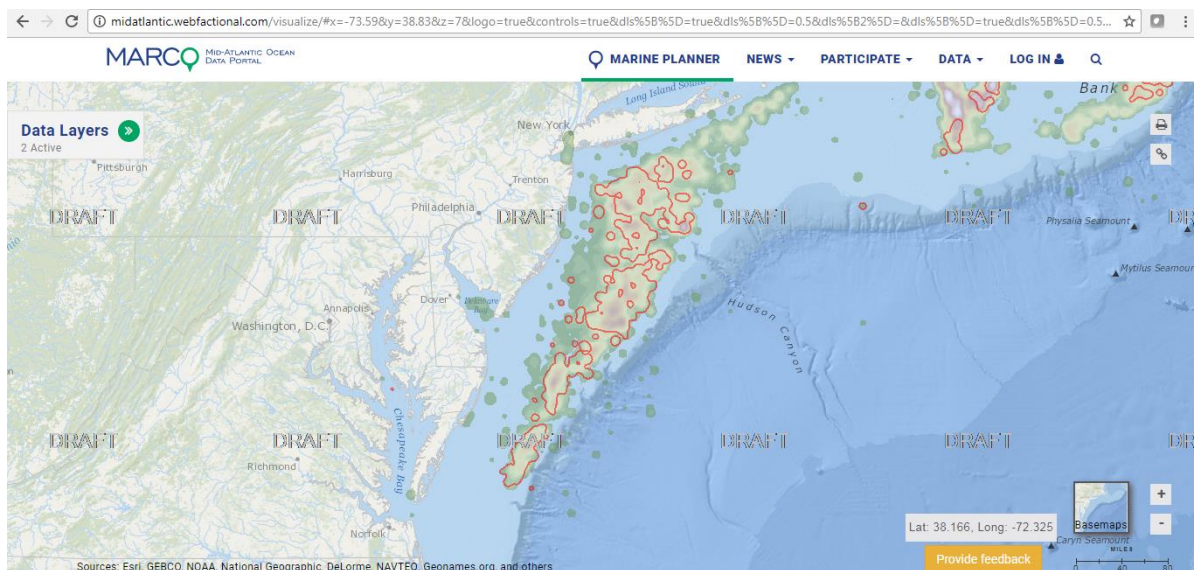
Further refining the images to illustrate the impact of the GLD, the Wind Energy Area layer is applied to the image, showing the activities as it relates to changes in ocean use, in this case offshore wind. While the siting of these projects is intended to minimize impacts, it does directly impact the efficiency of fishing and time at sea for the vessels since they are unlikely to conduct their activity in those areas.



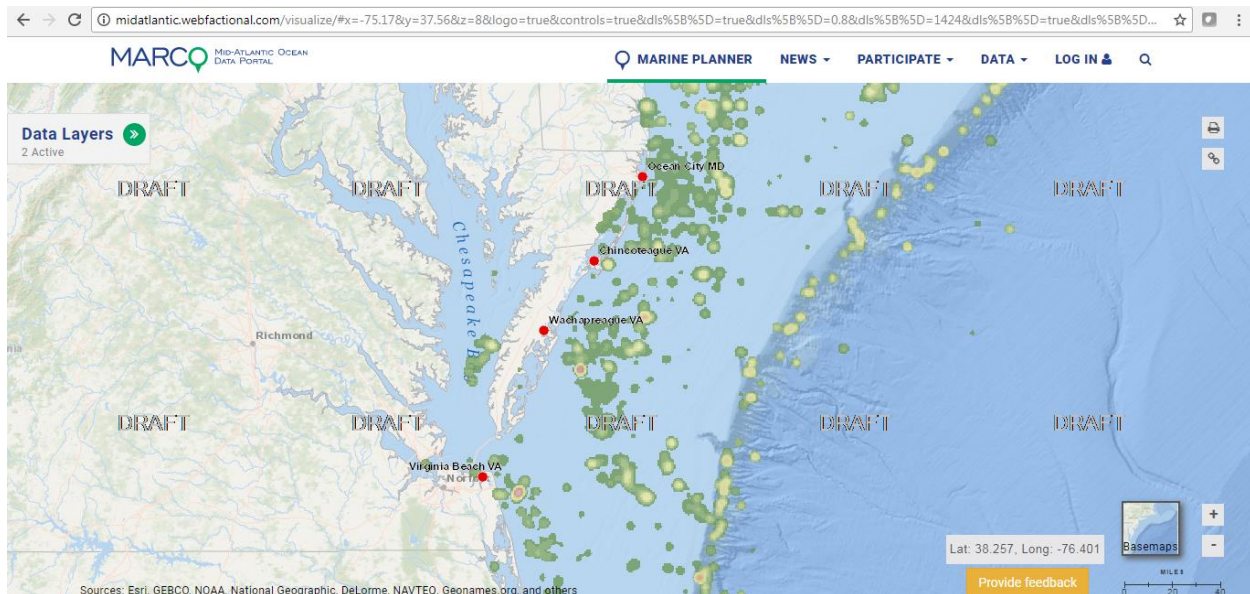


BOEM Wind Planning Areas and Active Renewable Lease Areas overlaid on Bottom Trawl, Newport News, Boats >65', overlaid on the Total Activity, 2011-2015

The previous image illustrates the importance of the expanded authority to protect their state landings. The reach by which the companies are extending to land fish in VA are significant and contribute greatly to the VA economy. While the above image only represents one type of fishing effort, Bottom Trawl >65' boats, this compounds when dredge, pot-trap and gillnet are considered.

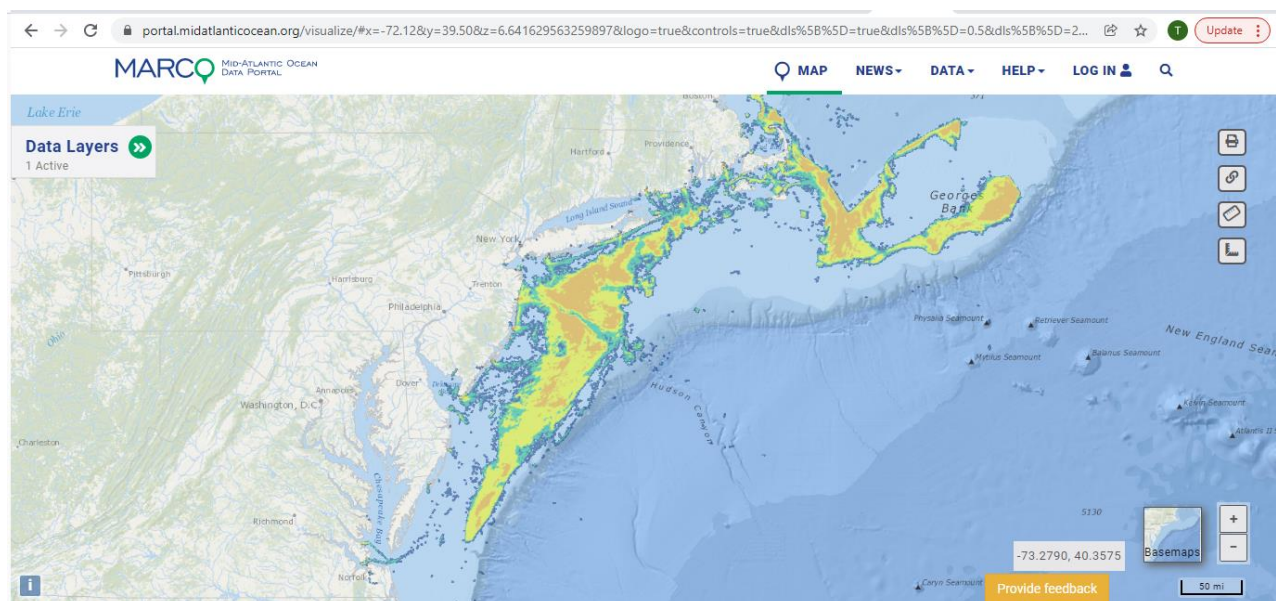


Dredge, 2011-2015



Pot-trap, 2011-2015

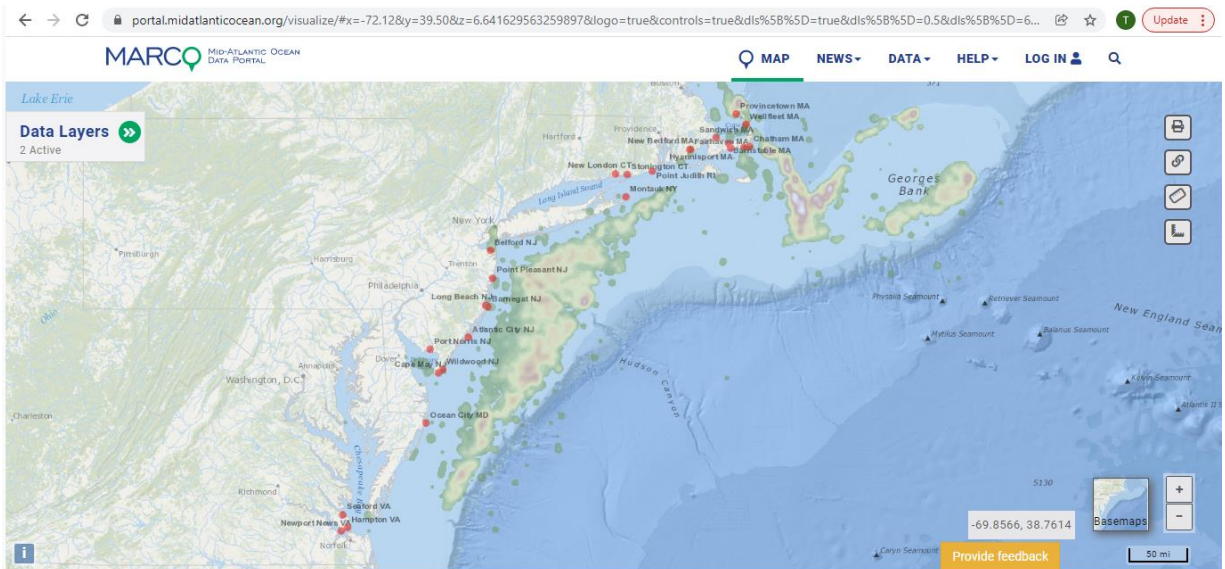
Additionally, the use of Vessel Monitoring System (VMS) illustrates the actual tracked progress of certain federally tracked fisheries. For scallop the VMS under five knots is indicative of fishing activity and can be seen in the following image. The similarities to those effort images in C@S reinforce the value of combining data images to interpret challenging information.



Vessel Monitoring System (VMS) Scallop <5kts

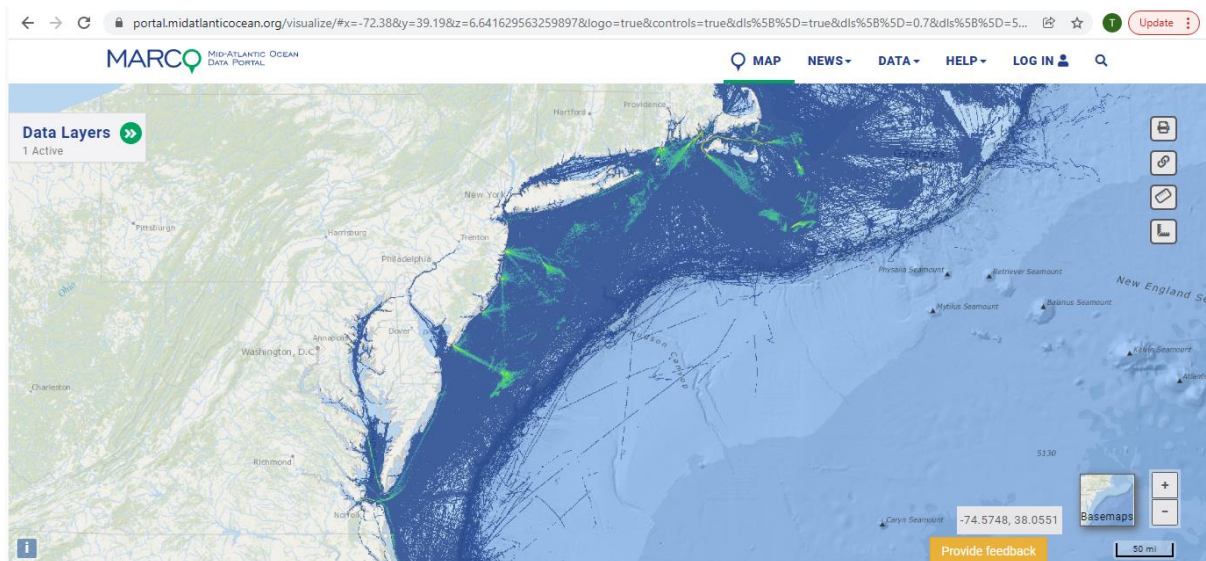
Similarly, by utilizing the Vessel Trip Report (VTR) layer for Scallop between years of 2011-2015 the heat map illustrates the effort of scallop similar to the above products. These consistent products illustrate that the fishing activity for the species overlap as predicted. Where the C@S products refine this is by applying the specific port that is relevant to their activity when viewed over the total activity.





Vessel Trip Report (VTR) Scallop, 2011-2015 vessels over 65'

The use of Automatic Information System (AIS) tracking mechanisms are an additional tool to confirm the fishing activity. However, the use of AIS is limited and the data is less valuable for the purpose of refining the understanding of fishing effort, activity or location. Given that caveat, AIS is very useful in tracking specific vessel movements when they have the system operational.



Automatic Information System (AIS) fishing vessel traffic 2020

The OPSE Coordinator worked with NOAA and CZM to continue to refine the process for submitting and developing background documentation for the policy analysis to complete a GLD. Documents were exchanged with NOAA and feedback was received to inform the text required to meet the required justification for the GLD. Requests for economic and landings data were made to both NOAA and the VMRC based on input, discussions and guidance from NOAA NMFS field staff in Virginia and North Carolina. The challenge posed are those data in the designated state waters outward to three miles are captured under both the NMFS landings and

the state landings data. For example, striped bass (*Morone saxatilis*) are caught at sea and in the Chesapeake but those fish caught at sea are only within the state coastal waters not in federal waters. Therefore, clarifying those landings to extract the catch at sea as opposed to those caught in total or in the Chesapeake was developed. Data associated with menhaden (*Brevoortia tyrannus*) became increasingly challenging to obtain due to the pending legislation changes during the reporting period. Consultation with VMRC and NOAA NMFS indicated those data would be available but would have confidentiality protections due to the limited number of permits for the fishery and limited number of ports of landing. Aggregate data, combining both would provide for an understanding of the total catch at sea, in state waters and in the Chesapeake Bay. However, the VMRC put a hold on sharing those data until the Commissioner's Office was able to share them. A total landing request was submitted to the VMRC for all species to identify those top landings and remove those species caught within the Chesapeake Bay but also caught at sea and in the coastal state waters, such as croaker (*Micropogonias undulatus*). That VMRC data request was reprioritized by staff to permit the completion of the VMRC data submission to NOAA NMFS to update the most recent landings. As the OPSE Coordinator worked with NOAA and VMRC to continue to refine economic the COVID-19 pandemic reduction in staff capacity made obtaining the data from the respective agencies challenging to obtain and discuss. Ultimately those menhaden data were included in the data package delivered by the VMRC.

During the reporting period, the OPSE Coordinator continued to have extensive communication with field partners including NOAA, and representatives from the Virginia commercial fishing fleet from the dredge, bottom trawl and pot fishery. Through these conversations, the NOAA and MRC category of "Total Conch" presented an unusual challenge due to the changed definition over time. The volume, value and means by which those are determined varied based on shucked meat, meat including shell, varied value of the processed meat and other factors still to be determined. The resolution was to include those data with the caveat that the records had changed overtime but the represented values and volume (both NMFS and VMRC) were valuable information to be used as it is "best available information". The outcome refined the economic analysis as part of the Geographic Location Description (GLD) and informed the informational document summarizing those species and value of ocean-caught fisheries landed in VA.

The OPSE Coordinator worked with NOAA, VMRC, VMPB and the subcontractor Green Fin Studio to refine economic analysis for submitting and developing background documentation for the policy analysis to complete a GLD. Green Fin Studio was contracted, as outlined in the proposal to assist with the graphic display of those relevant economic data and to inform the public facing documents outlined in the following section. Those data summaries illustrated that the Atlantic Sea Scallop and Atlantic Menhaden were consistently the top earning and highest volume landings to VA. Once removing those two high earners, the next most valuable species were summer flounder, black sea bass, conch (channeled), striped bass and croaker, depending on the year what was recorded as most valuable. These data illustrate that while the dominant species of scallop and menhaden are significant economic drivers to maintain a healthy fishery, those secondary fisheries identified above made up for a significant portion of Virginia's economic picture. These species are typically caught closer to VA ports and more immediately affected by changes in ocean use and in some cases are caught in the designated WEAs. The data

also can be interpreted to illustrate that while they are valuable, they are sensitive and likely to realize impacts from those changes before changes are realized to the higher earning fisheries.

The OPSE Coordinator continued to work with NOAA, the MARCO states, and New England states to refine the concept of the GLD and to develop an argument that would justify the expansion of the covered area considered as part of the Federal Consistency review. In the monthly fisheries coordination calls, as facilitated by staff from Rhode Island, the topic of GLD has been one met with encouragement to pursue as coastal states determine the course of action to address fisheries in light of ocean use change. As the project continued and was extended due to COVID or delays in obtaining data, the tides shifted away from a likely positive outcome as the offshore wind project permitting process began to outpace the likely approval of a GLD. Additionally, it was apparent that the agency responsible for providing detailed comments with respect to fisheries would not have the capacity to address the added workload from reviewing and submitting comments on overlapping Construction and Operations Plans (COPs), further pushing the likely success of approvals. Other states in the Atlantic recognized the benefit of larger GLD areas but also were met with resistance or the inability to obtain an approved GLD as they made informal requests.

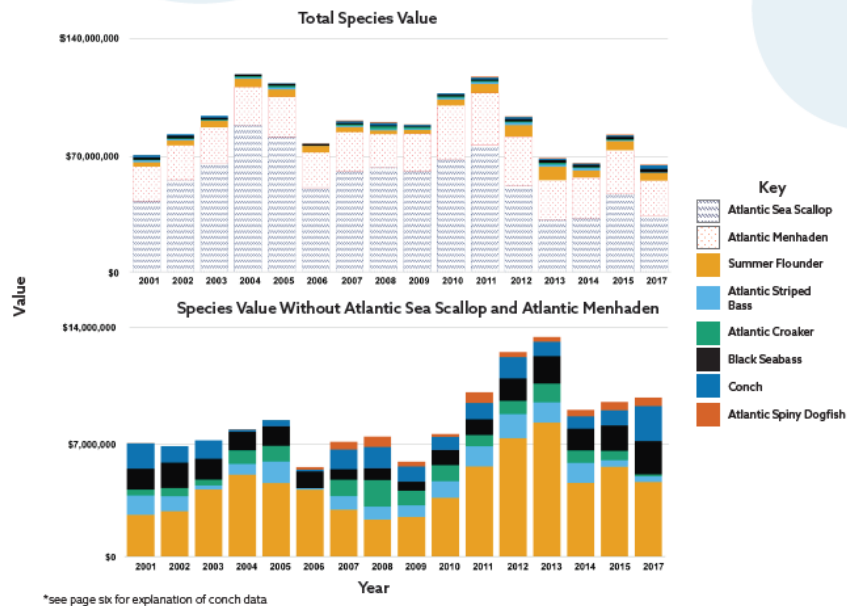
### **Communicating the Value of Fisheries Document**

The project proposal outlined the task of translating the economic data and discussion to inform a GLD into a public facing document. The intent is to allow the value of those ocean-caught resources to be realized by a larger audience. The VCU subcontracted Green Fin Studio to develop the document to translate the economic research in a consumable format to communicate the value of the offshore fisheries in VA. Green fin assisted with the visualization of data from 2001 to 2015, and 2017 into accessible formats that permit the reader to familiarize with lesser known but valuable ocean-caught species. This document will be used to inform those most interested in our commercial fishing industry, it will assist with communicating the need to protect those sensitive species as the communities are vulnerable to changes that would affect their livelihoods

As the process to develop the document advanced, edits were provided to refine the gear types, species of interest and the year class to be communicated for the catch caught in the Atlantic and landed in Virginia. As the OPSE Coordinator worked with NOAA, VMRC, VMPB and Green Fin Studio toward publishing synthesis for the public economic document, the ability to accurately interpret those data, as shared by NOAA NMFS and VMRC were raised. The issue of confidentiality were of the utmost priority. Therefore, all summaries and display of data are presented in aggregate form and with tabular form that protects the data. As seen in the following, the interpretation of those data were illustrated in stacked graphic charts on a yearly basis.

## THE VALUE OF VIRGINIA'S MOST COMMERCIALY IMPORTANT OCEAN-CAUGHT SPECIES

Commercial fishermen travel from just a few miles offshore to hundreds of miles off New England to fish before heading back to their home ports in Virginia. This section summarizes landing information on some of Virginia's most important commercial species caught beyond the Chesapeake Bay, from the mean low water (MLW) mark to 200 nautical miles offshore in the Atlantic Ocean. Hard clams and oysters have been excluded from these data because they are not typically considered ocean-caught species. These data were derived from both the Virginia Marine Resources Commission and NOAA landings, removing those values associated with the Chesapeake Bay to arrive at the value of species caught in the Atlantic, except for the value of conch\*. The first graph below shows the combined value of some of Virginia's most commercially important species caught in the Atlantic Ocean from 2001-2015, and 2017. The second graph shows the same data as the first, but without the values of Atlantic sea scallop and Atlantic menhaden to show data for other species in greater detail. The values of Atlantic sea scallops and Atlantic menhaden are orders of magnitude larger than the other species, and emphasize the importance of the fisheries to Virginia.



#### 4 | Virginia's Commercial Fishing: Beyond the Bay

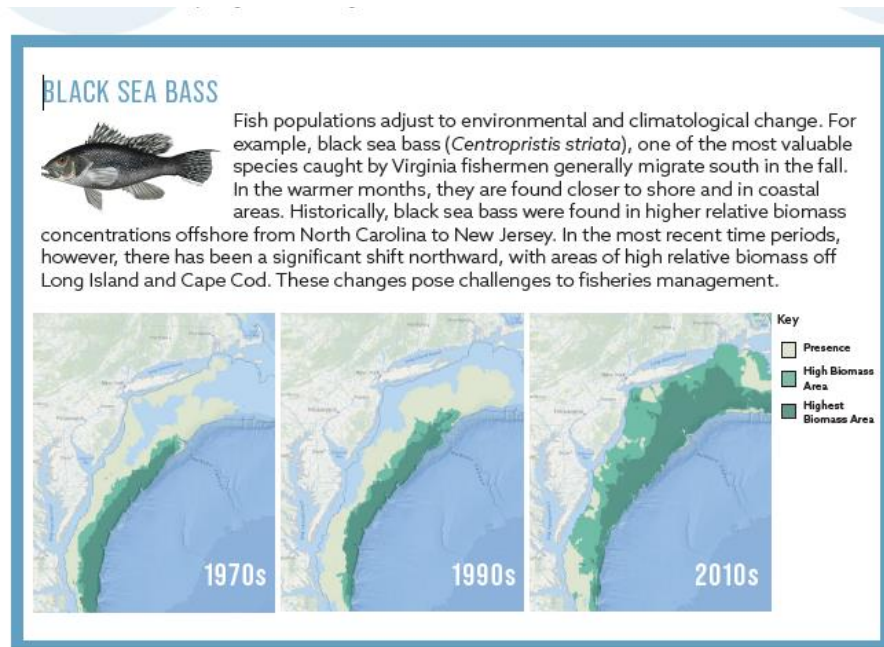
Page 4 from Virginia's Commercial Fishing: Beyond the Bay  
Economic Summary

The final products highlighted that the Commonwealth includes more than 6000 commercial fishermen and crew traveling from a few miles to several hundred to benefit our economy. Our highest earning fisheries, sea scallop, primarily fish off of the coast of Massachusetts and our second most valuable fishery, menhaden, is conducted off New Jersey. With more than 50 commercially viable species available, the diversity and seasonal distribution provide for a well-rounded contribution to Virginia. Reedville ranks in the top five for highest landings, consistently because of the menhaden industry. The document illustrates sea scallop, menhaden, summer flounder, striped bass, Atlantic croaker, black sea bass, whelk (conch) and spiny dogfish as the highlighted species that consistently rank in the top ten for landing value. To further the reader's information, direct connection to the type of fishing that generates those species is illustrated.

Of special focus are on how certain commercial species are changing over time such as black sea



bass. Research has shown that the species is shifting northward in its biomass following changing sea temperatures. Summer flounder are demonstrating a similar trend but shifting southward. These can be best viewed on the MARCO Marine Data Portal with a slider feature to allow the user to visualize the changing patterns and density.



\*These data make no assumptions on what factors are causing species shifts. If you are interested in the causation for species shifts, please refer to the most recent [scientific publications](#) on the subject.

Shifting trends of black sea bass

The document highlights the Community at Sea data layers available on the MARCO Marine Data Portal. The document highlights the side by side of the 2011-2015 time series for Total Dredge to Virginia Ports Dredge, and Total Pots and Traps to Virginia Pots and Traps. It illustrates the usefulness of the Data Portal to understanding where to obtain further information and how it is presented.

This award supported the continued outreach to and engagement of our commercial fishing industry to ensure their activities are not lost in the rapidly changing seascape. The commercial fishing industry has appreciated the ability to forge constructive working relationships while recognizing the work hours of their activities that are not consistent with those in government, policy or fisheries management. Direct communication via phone, email and direct message has helped stabilize a foundation for future work. The VCZM support of the OPSE Coordinator to build the bridge advances the VCZM and NOAA to be a more effective broker when conflicts arise. Understanding the economics and policy challenges of advocating and protecting a state's resources is of utmost importance. The commercial and for-hire fishing industry has few formal, effective organizations that might articulate their concerns. The offshore environment continues to struggle for space with increased use from vessel traffic, mineral extraction, military activities, aquaculture, commercial fishing and the development of renewable energy. By effectively positioning the Commonwealth into a stronger seat will only benefit the process to ensure that Virginia maintains their long history of fishing as a significant source of revenue.

The document “Virginia Commercial Fishing: Beyond the Bay: A report on the value of Virginia’s ocean-caught fisheries” is available at:

<https://www.deq.virginia.gov/coasts/ocean-management/virginia-ocean-planning/fishing-offshore-wind>

